

Anthrax - Safety Aspects

Anthrax, a disease of mammals, including humans, is caused by a spore-forming bacterium called *Bacillus anthracis*. This is one of three information sheets on anthrax. The other information sheets include a general overview and discussion of clinical signs and diagnoses.

Necropsy

When anthrax is suspected as the cause of death, the affected carcass should **NOT** be opened. In the event an infected carcass is inadvertently opened, necropsy examination of ruminants may show (1) rapid decomposition; (2) lack of rigor mortis; (3) dark, tar-like blood that does not clot; (4) generalized septicemia; and (5) an enlarged hemorrhagic blackberry jam spleen. Bloody discharges from the nose, mouth, or anus are not always seen and the absence of this sign should not be taken as ruling out anthrax.

In horses, lesions are generally confined to the edematous infiltration of the tissues in the neck area. In swine, there is often extensive edema around the lymph nodes.

Veterinarians and other personnel should take precautions to avoid skin contact with potentially contaminated carcasses and soil. Personal protective equipment (PPE), such as impermeable gloves, boots, and clothing should be used.

Use disposable PPE if possible or decontaminate PPE thoroughly immediately after use. Although the risk of respiratory infection is extremely small, veterinarians and other personnel conducting necropsy examinations, soil remediation, and disposal of animal carcasses should consider wearing respirators with a high-efficiency particulate air (HEPA) filter.

Prevention

The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) restricts the importation of animal products from slaughtered animals including hides, skins, wool, hair, and bristles from countries where anthrax infections occur.

In order to protect domestic livestock against anthrax infection, these products must be certified by the exporting country's veterinary inspection service.

Vaccination

Annual vaccination of livestock in endemic anthrax areas is recommended. The most widely used vaccine for the prevention of anthrax in animals is the Sterne-strain vaccine.

This vaccine is a non-encapsulated live variant strain of *B. Anthracis* developed by Sterne in 1937. Immunity develops 7-10 days after vaccination.

The Sterne anthrax vaccine produced in the United States is licensed for use in livestock (cattle, sheep, horses, goats, and swine) only.

Treatment

B. anthracis is highly susceptible to a number of antimicrobial agents. Penicillin and oxytetracycline have been reported to be the most therapeutically effective agents.

Because the live spore vaccine must germinate and grow in the vaccinated animal's body to provide protection, antibiotics should not be administered to healthy animals either at the time of, or shortly after, the administration of the anthrax vaccine.

Where anthrax is suspected or confirmed, use of long-acting antibiotics such as those listed above, followed by vaccination 7-10 days later is effective in preventing further livestock deaths. It should be noted that this regimen has not been systematically evaluated.

Control Measures

All outbreaks of anthrax should be reported to State or Federal animal and public health officials. In general, all remaining animals should be promptly removed from the affected pasture, a limited quarantine should be placed on affected premises for 10-14 days, and all susceptible healthy livestock on affected and surrounding premises should be vaccinated. To reduce environmental contamination, carcasses of animals that die of anthrax should be burned or buried at least 6 feet deep.

In addition, bedding, soil, and other materials contaminated with body fluids should also be burned or buried.

For More Information

For more information, contact
USDA, APHIS, Veterinary Services
Emergency Programs
4700 River Road, Unit 41,
Riverdale, MD 20737-1231
Telephone (301) 734-8073
Fax (301) 734-7817

or visit our Web site at www.aphis.usda.gov/vs/

For Public Health Information

For more information on anthrax regarding public

health, contact

Centers for Disease Control and Prevention
1600 Clifton Road
Atlanta, GA 30333
Telephone (404) 639-3311
or visit their Web site at www.cdc.gov/

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